

2003年 4月15日 16時52分: 特許庁 YOSHIKAWA INTL PATENT OFFICE
2003年 4月15日 13時34分PM YOSHIKAWA INTL PATENT OFFICE

NO. 761 P. 5/10 # 5/10
NO. 745a P. 6 - -



DOCKET NO.: 208235US0

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

IN RE APPLICATION OF

NAOTO IKEGAWA, ET AL.

: EXAMINER: UHLIR, N.

SERIAL NO: 09/871,896

FILED: JUNE 4, 2001

: GROUP ART UNIT: 1773

FOR: LAMINATE

DECLARATION UNDER 37 C.F.R. § 1.132

ASSISTANT COMMISSIONER FOR PATENTS
WASHINGTON, D.C. 20231

SIR:

Now comes Naoto Ikegawa who deposes and states:

1. I am a graduate of Kyoto Institute of Tech and received my Doctor degree in the year 1996
2. I have been employed by Matsushita Electric Works for 12 years as regular employee in the field of molding technology
3. That the following experiments were carried out and the resulting data are reported below.

Three base resins were produced as follows:

- a) An aromatic polyamide (PPA) base resin was prepared by adding a filler material of boric aluminum at an amount of 70% (by mass) thereto.
- b) A liquid crystal polyester base resin was prepared by adding a filler of fibrous potassium titanate at an amount of 50% (by mass) thereto.
- c) A polyether ether ketone was prepared by adding a filler of glass fiber at an amount of 50% (by mass) thereto.

TC 1700 MAIL ROOM

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NO. 761 P. 6/10# 8/ 10

NO. 745 P. 7

A sample of each base resin produced above was treated by nitrogen plasma, oxygen plasma and argon plasma and a copper metal layer deposited on the base resins using the procedures set forth in the present application at the section titled "Examples" on pages 29-30.

The adhesion between the base resin and the deposited metal was then measured and the results of the experiments are shown in Table 1.

Table 1

Base resin	Filler		Nitrogen plasma	Oxygen plasma	Argon plasma
	Material	Configuration			
Aromatic polyamide (PPA)	Boric aluminum	70%	1.1N/mm	0.77N/mm	1.04N/mm
Liquid Crystal polyester	Fibrous potassium titanate	50%	0.55N/mm	0.25N/mm	0.37N/mm
Polyether Ether Ketone	Glass fiber	50%	0.70N/mm	0.60N/mm	0.55N/mm

4. The results of the experiments set forth in Table 1 demonstrate for each different type of base resin containing a different amount of filler material in a different amount within the range of the present claims a higher adhesion for deposited metal to base resin treated by nitrogen plasma over deposited metal to a base resin treated by oxygen plasma or argon plasma from a range of approximately 6% greater adhesion up to 220% greater adhesion. Therefore, it is clear that nitrogen plasma treatment of a base resin containing filler material according to Claim 1 produces superior adhesion between the base resin and deposited metal, as compared to a base resin with filler material treated by oxygen plasma or argon plasma.

5. I declare further that all statements made of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these

2003年 4月15日 16時53分 YOSHIKAWA INTL PATENT OFFICE
2003年 4月15日 13時34分 YOSHIKAWA INTL PATENT OFFICE

NO. 761 P. 7/10 # 7/ 10
NO. 745 P. 8

statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of this application or any patent issuing thereon.

6. Further Declarant saith not.

Naoto Ikegawa 04/15/03
Date